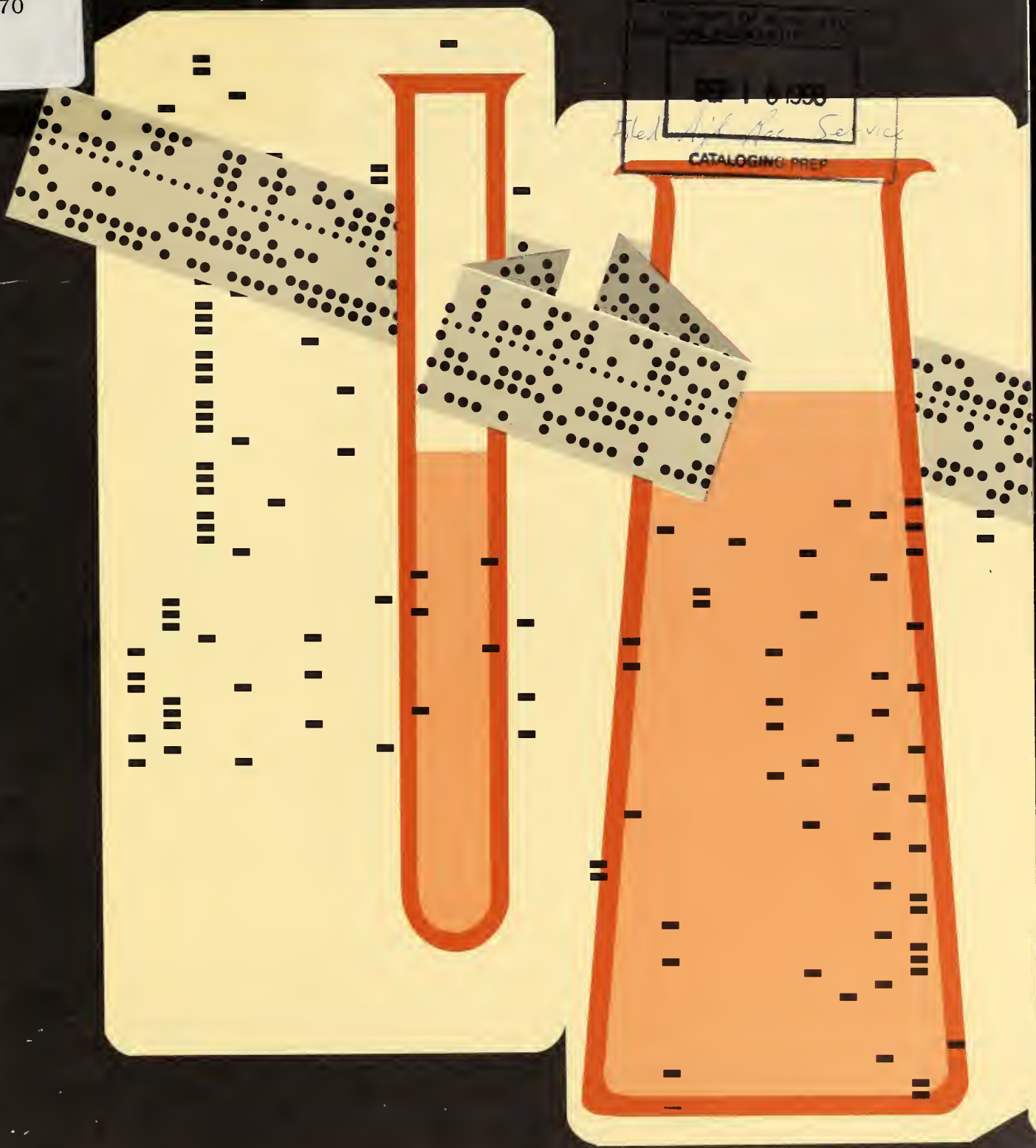
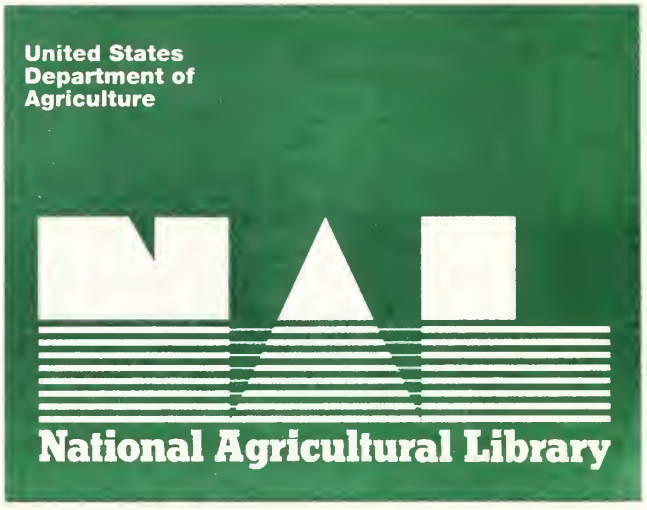
profile of scientists

IN RESEARCH ACTIVITIES OF THE AGRICULTURAL RESEARCH SERVICE



MOHR Staff Report Prepared Jointly by Personnel Division of Agricultural Research Service and Office of Personnel, U.S. Department of Agriculture — March 1970



I unders from
the MOH end it
to the a ent it
points th

This rep ltural
Researcl be, it
provides esting
relations auses.

Such studies are important in providing line managers with a fuller understanding of the personnel characteristics of their organizations. However, such studies will merely add unnecessarily to the bulk of our files unless they are accompanied by active involvement of line managers in personnel programs. Personnel development and management cannot be redelegated to staff activities. Staff can only provide the information on which line managers act.

This study and further functions of MOHR, if they are to reach the payoff stage, must result in their utilization by line managers for improvement of our personnel programs. I urge each line administrator, director, branch chief and investigation leader to study this report to determine the questions it raises for each. I further urge each of these persons to become sufficiently involved to obtain within their own units the answers to those questions which will further improve personnel effectiveness and opportunity.

N. D. Bayley

Director
Science and Education

INTRODUCTION

We are pleased to present this report entitled "Profile of Scientists in Research Activities of the Agricultural Research Service." This is the *first* in a series of management reports covering this group of employees being produced from the MOHR data bank—a joint project by the Office of Personnel and the Agricultural Research Service. Similar management reports on other employee groups included in MOHR are planned for the future.

This particular report analyzes educational levels of the scientists covered; distribution of these scientists by institutions from which graduated, occupation, grade, age, and division; authorship of scientific publications; and the interrelationship of some of these factors. Employees included in the study are 3,569 permanent full-time professionals—individual research workers, supervisors, and managers—in GS-7 through GS-18 engaged in research activities of ARS. Thirty-eight occupations and 17 divisions are represented. The data for the report was computer-produced as of November 12, 1969, on the basis of questionnaires completed by employees for the MOHR Program.

The report compares current data on a few factors with that developed from previous studies—the Parker Committee Report of data collected in 1963, and a report prepared by Dr. Byron T. Shaw based on data compiled in 1965. It is expected that additional helpful comparisons of this kind will be possible in the future as comprehensive reports from MOHR data are developed and published.

Some highlights of the report are:

. . . PhD's comprise 47.6% of the scientists studied—up from 39.6% in 1963

. . . 73.2% of the scientists have advanced degrees—up from 67.9% in 1963

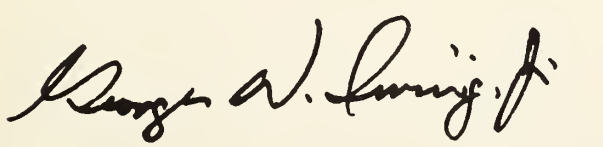
. . . Land-grant institutions furnished 71.3% of the scientists—86 institutions educated 83.1% of them

. . . Average grade is GS-12.1—up from GS-11.8 in 1965—for PhD's it is GS-13.1

. . . Average age is 43.5—for PhD's it is 43.8

. . . Authorships of scientific publications totaled 67,737—an average of 19 per scientist and 25 per PhD holder

It is believed this report will be both informative and useful to those concerned with managing and supervising research programs. We also encourage its circulation to all professional research workers in ARS so that they may have some "feedback" from their input to the MOHR data bank.



Administrator
Agricultural Research Service

Director of Personnel, USDA

TABLE OF CONTENTS

Page

OVERVIEW

Degree Levels, Grade Groups, and Age Groups 2

EDUCATION

Six Year Comparison by Degree Level 4
Analysis of Recruitment Sources 6
Listing of Primary Recruitment Sources 8

GRADES

Four Year Comparison by Grade 10
Grade Distribution by Occupation 11
Grade Distribution by Degree 12
Average Grade by Degree Level 12
Average Grade for Principal Occupations 13

AGE

Average Age by Degree Level 14
Average Age by Grade 14
Four Year Comparison by Age Groups 15
Percentage Distribution by Degree Levels Within Age Groups 16
Four Year Comparison by Age Groups and Grades 18

PUBLICATIONS

Degree Level Versus Authorship 20
Authorships by Grade and Degree 21

APPENDIX

Number and Percentage of Total Scientists by Divisions 22
Six Year Comparison by Degree Level by Divisions 23
Percentage Distribution by Grade by Divisions 24
Percentage Distribution by Age Groups by Divisions 27
Degree Level Versus Authorship by Divisions 30

OVERVIEW OF DEGREE LEVEL, GRADE, AND AGE OF ARS SCIENTISTS NOVEMBER 1969

Distribution of Scientists by Degree Levels

Degree Level	Scientists No.	%
PhD	1701	47.6
DVM	36	1.0
MS	877	24.6
BS	920	25.8
Less than BS	35	1.0
TOTAL	3569	100.0

Distribution of Scientists by Grade Groups

Grade Group	Scientists No.	%
GS-14 and Above	757	21.2
GS-12 and 13	1846	51.7
GS-7, 9, and 11	966	27.1
TOTAL	3569	100.0

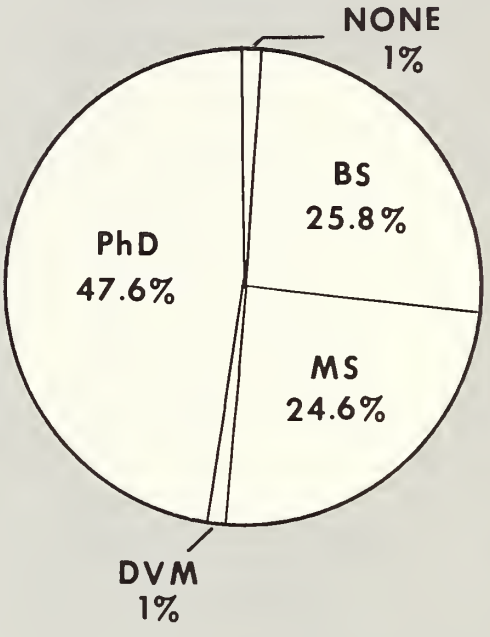
Distribution of Scientists by Age Groups

Age Group	Scientists No.	%
50 or more years of age	1017	28.5
35 - 49 years of age	1719	48.2
Under 35 years of age	833	23.3
TOTAL	3569	100.0

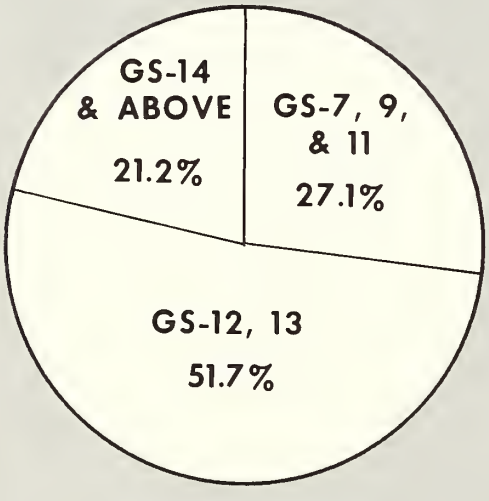
NOTE: Scientists with DVM plus either PhD or MS degrees are included in the PhD or MS groups throughout this report.

PERCENT DISTRIBUTION OF SCIENTISTS BY DEGREE LEVEL, GRADE, AND AGE GROUP

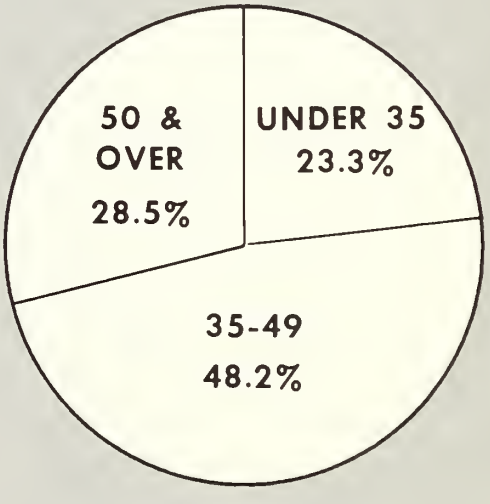
DEGREE



GRADE



AGE



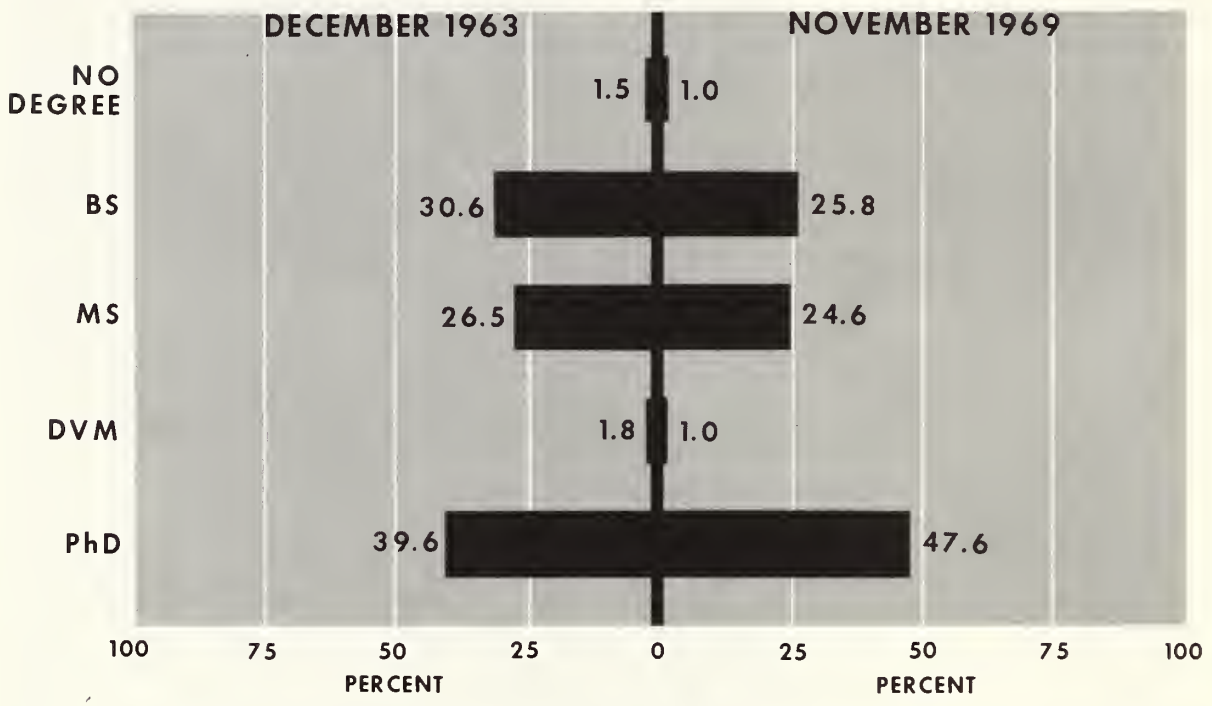
NOVEMBER 1969

EDUCATION

COMPARISON OF DISTRIBUTION OF SCIENTISTS BY DEGREE LEVEL DECEMBER 1963 - NOVEMBER 1969

Degree Level	As of 12/63		As of 11/69		Change from 1963	
	No.	%	No.	%	No.	%
No Degree	53	1.5	35	1.0	-18	-34.0
BS	1056	30.6	920	25.8	-136	-12.9
MS	917	26.5	877	24.6	-40	-4.4
DVM	62	1.8	36	1.0	-26	-41.9
PhD	1368	39.6	1701	47.6	+333	+24.3
TOTAL	3456	100.0	3569	100.0	+113	+3.3

COMPARATIVE PERCENT DISTRIBUTION OF SCIENTISTS BY DEGREE LEVEL



ANALYSIS OF RECRUITMENT SOURCES

. . . Land-grant institutions furnished 2519, or 71.3% of the scientists—49.3% of Bachelors, 74.6% of Masters, 86.1% of DVM's, and 81.1% of PhD's.

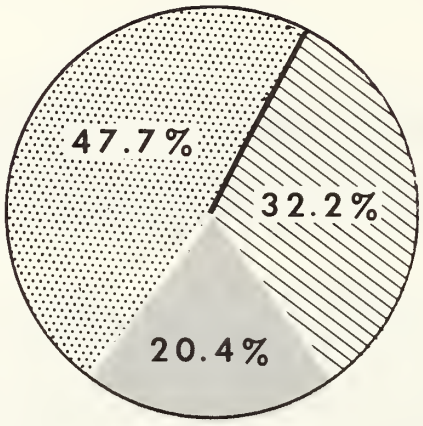
. . . 888 scientists were the product of five universities.

. . . Foreign institutions educated 1.0% of the total.

. . . 57 land-grant and 29 non-land-grant schools—for a total of 86—educated 83.1% of all scientists. Names of these primary recruitment sources showing the number of graduates by degree levels from each school appear on pages 8 and 9.

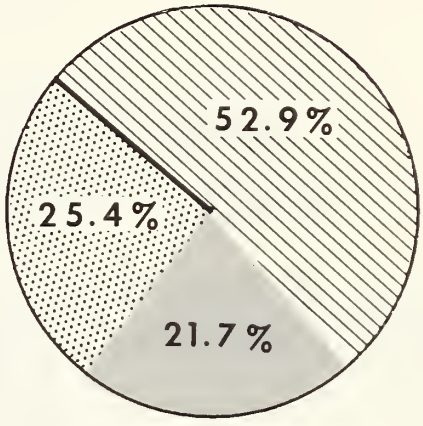
PERCENT DISTRIBUTION OF SCIENTISTS BY DEGREE LEVEL AND RECRUITMENT SOURCES

NOVEMBER 1969



BS

UNIV. OF CALIF.
LSU
UNIV. OF MD.
MISS. STATE UNIV.
TULANE UNIV.



MS

UNIV. OF CALIF.
IOWA STATE UNIV.
KANS. STATE UNIV.
UNIV. OF MD.
OHIO STATE UNIV.
OKLA. STATE UNIV.

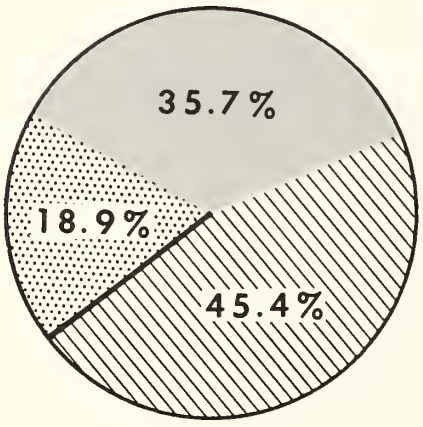
OTHER LAND GRANT COLLEGES

UNIV. OF CALIF.
IOWA STATE UNIV.
UNIV. OF MINN.
CORNELL
UNIV. OF WIS.

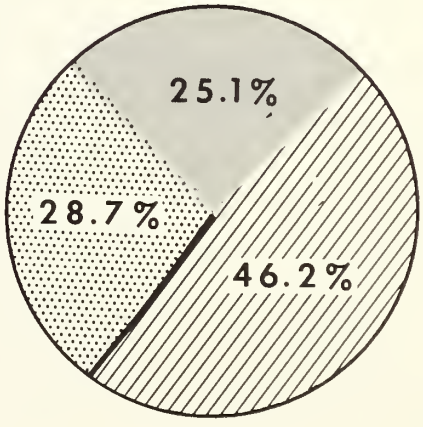
ALL OTHER COLLEGES

UNIV. OF CALIF.
IOWA STATE UNIV.
UNIV. OF MD.
CORNELL
UNIV. OF WIS.

PhD



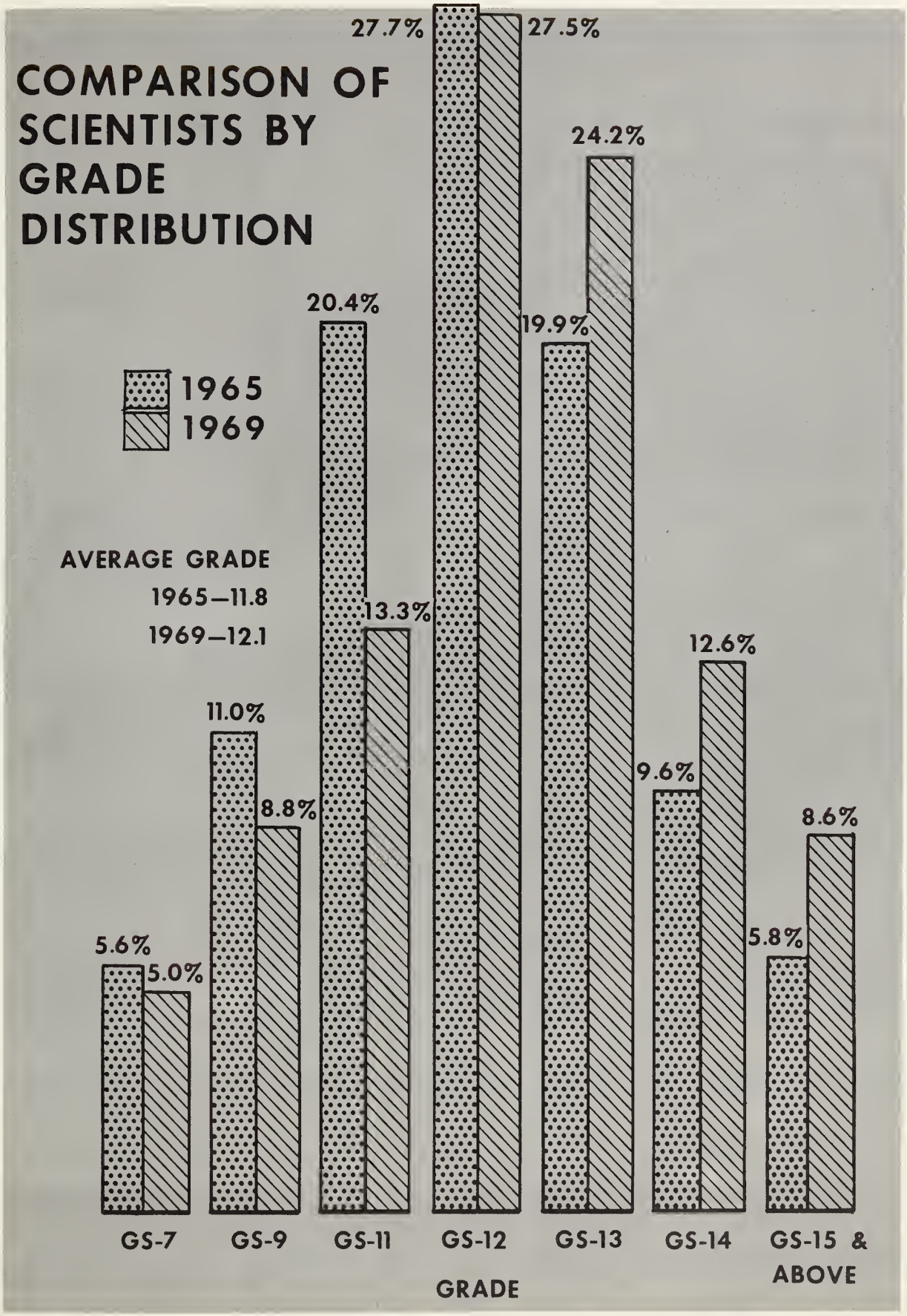
ALL



LISTING OF PRIMARY RECRUITMENT SOURCES NOVEMBER 1969

LAND-GRANT SCHOOLS	BS	MS	DVM	PhD	TOTAL
Auburn University, Alabama	6	16	2	12	36
Alabama A&M	1	--	--	--	1
Arizona, University of	4	7	--	5	16
Arkansas, University of	3	11	--	--	14
A&M Normal College, Arkansas	2	--	--	--	2
California, University of	53	31	1	137	222
Colorado State University	10	16	2	14	42
Connecticut, University of	1	--	--	5	6
Delaware, University of	3	2	--	--	5
Delaware State College	--	--	--	1	1
Florida, University of	11	15	--	15	41
Florida A&M University	1	--	--	--	1
Georgia, University of	11	24	2	12	49
Georgia Institute of Technology	7	2	--	--	9
Hawaii, University of	4	3	--	5	12
Idaho, University of	4	8	--	1	13
Illinois, University of	15	20	--	82	117
Purdue University, Indiana	10	19	--	69	98
Iowa State University	18	38	5	117	178
Kansas State University	14	34	1	34	83
Kentucky, University of	--	8	--	1	9
Louisiana State University	21	13	--	20	54
Southern University, Louisiana	2	--	--	--	2
Maine, University of	4	1	--	--	5
Maryland, University of	56	37	--	80	173
Maryland State College	1	--	--	--	1
Massachusetts, University of	--	3	--	11	14
Michigan State University	5	22	4	46	77
Minnesota, University of	7	24	--	93	124
Mississippi State University	28	15	--	5	48
Missouri, University of	8	15	--	15	38
Nebraska, University of	6	21	--	24	51
New Hampshire, University of	--	1	--	2	3
Rutgers University, New Jersey	2	5	--	29	36
New Mexico State University	--	3	--	1	4
Cornell University, New York	8	18	3	100	129
North Carolina State College	5	7	--	32	44
North Carolina, A&T College of	2	--	--	--	2
North Dakota State University	13	13	--	6	32
Ohio State University	8	25	3	42	78
Oklahoma State University	8	25	--	19	52
Oregon State University	5	19	--	40	64
Pennsylvania State University	11	10	--	29	50
Puerto Rico, University of	3	1	--	--	4
Rhode Island, University of	2	2	--	1	5
Clemson College, South Carolina	13	14	--	5	32
South Dakota State University	2	6	--	4	12
Tennessee, University of	6	9	--	3	18

Texas A&M College	10	23	6	36	75
Utah State University	8	16	--	13	37
Vermont, University of	--	1	--	1	2
Virginia State College	--	1	--	--	1
Virginia Polytechnic Institute	6	15	--	9	30
Washington State University	10	9	2	35	56
West Virginia University	3	3	--	5	11
Wisconsin, University of	11	14	--	161	186
Wyoming, University of	2	9	--	3	14
SUB-TOTAL	454	654	31	1380	2519
NON-LAND-GRANT SCHOOLS					
Alabama, University of	4	--	--	--	4
Tuskegee Institute, Alabama	--	--	1	--	1
American University, D.C.	--	3	--	1	4
Catholic University, D.C.	1	1	--	2	4
Galludet College, D.C.	2	--	--	--	2
Georgetown University, D.C.	--	2	--	8	10
George Washington University, D.C.	13	10	--	8	31
Howard University, D.C.	5	2	--	--	7
Florida State University	4	3	--	2	9
Bradley University, Illinois	15	16	--	1	32
Chicago, University of, Illinois	--	7	--	16	23
Iowa, University of	1	4	--	15	20
Kansas, University of	1	6	--	6	13
Tulane University, Louisiana	30	20	--	8	58
Massachusetts Institute of Technology	--	2	--	6	8
Harvard University, Massachusetts	--	3	--	7	10
Michigan, University of	2	9	--	5	16
Mississippi, University of	5	2	--	1	8
Columbia University, New York	1	7	--	10	18
Syracuse University, New York	4	--	--	2	6
North Carolina, University of	--	4	--	16	20
Drexel Institute of Technology, Pa.	15	7	--	--	22
Temple University, Pennsylvania	8	4	--	10	22
Chestnut Hill College, Pennsylvania	6	--	--	--	6
Pittsburgh, University of, Pennsylvania	1	3	--	4	8
Pennsylvania, University of	9	5	--	9	23
Texas, University of	7	2	--	6	15
Washington, University of	4	3	--	4	11
Wisconsin State College	6	--	--	1	7
SUB-TOTAL	144	125	1	148	418
TOTAL FROM PRIMARY RECRUITMENT SOURCES	598	779	32	1528	2937
SCIENTISTS FROM OTHER DOMESTIC SCHOOLS	315	95	2	149	561
SCIENTISTS FROM FOREIGN SCHOOLS	7	3	2	24	36
GRAND TOTAL	920	877	36	1701	3534


COMPARISON OF SCIENTISTS BY GRADE DISTRIBUTION
1965
1969
AVERAGE GRADE
1965—11.8
1969—12.1
5.6%
5.0%
11.0%
8.8%
20.4%
13.3%
27.7%
27.5%
19.9%
24.2%
9.6%
12.6%
5.8%
8.6%
GS-7
GS-9
GS-11
GS-12
GS-13
GS-14
GS-15 & ABOVE
GRADE

NUMBER OF SCIENTISTS BY GRADE AND OCCUPATION NOVEMBER 1969

OCCUPATIONS	TOTAL	% of Total	GRADES 7	9	11	12	13	14	15+
Agronomy	185	5.2	13	15	13	44	61	31	8
Botany	34	0.9	3	2	3	11	11	3	1
Entomology	414	11.6	10	31	66	150	108	33	16
General Biological Sciences	181	5.1	19	15	8	12	9	38	80
Genetics	105	2.9	--	2	7	36	37	18	5
Home Economics	27	0.8	3	6	7	3	2	5	1
Horticulture	67	1.9	5	3	12	26	11	8	2
Husbandry	68	1.9	5	10	9	17	18	9	--
Microbiology	120	3.4	6	9	17	35	25	23	5
Pharmacology	4	0.1	--	--	--	1	1	--	2
Physiology	19	0.5	--	1	2	5	6	3	2
Plant Pathology	196	5.5	2	5	13	90	60	20	6
Plant Physiology	155	4.3	--	11	8	52	58	16	10
Range Conservation	18	0.5	--	2	1	5	8	2	--
Soil Science	210	5.9	6	21	16	62	66	21	18
Veterinary Medical Science	[1]89	[1]2.5	--	--	5	15	39	19	11
Zoology	51	1.4	4	3	5	13	11	13	2
TOTAL BIOLOGICAL SCIENCES	**1943**	**54.4**	**76**	**136**	**192**	**577**	**531**	**262**	**169**
Agricultural Engineering	249	7.0	7	27	60	68	50	23	14
Architecture	5	0.1	--	1	--	2	2	--	--
Chemical Engineering	66	1.9	--	3	10	19	19	6	9
Civil Engineering	53	1.5	--	4	13	14	11	5	6
Electrical Engineering	2	0.1	--	--	2	--	--	--	--
Electronic Engineering	3	0.1	--	--	1	2	--	--	--
General Engineering	15	0.4	--	1	2	3	8	1	--
Industrial Engineering	15	0.4	--	--	4	6	5	--	--
Mechanical Engineering	22	0.6	1	1	5	8	4	2	1
TOTAL ENGINEERING	**430**	**12.1**	**8**	**37**	**97**	**122**	**99**	**37**	**30**
Chemistry	970	27.2	82	113	150	240	187	123	75
General Physical Science	39	1.1	--	--	2	2	5	5	25
Mathematics	8	0.2	4	3	1	--	--	--	--
Physics	37	1.0	1	5	7	7	10	4	3
TOTAL PHYSICAL SCIENCES	**1054**	**29.5**	**87**	**121**	**160**	**249**	**202**	**132**	**103**
Economist	23	0.6	1	3	6	4	3	5	1
Food Technology	49	1.4	3	11	7	10	12	3	3
Geology	10	0.3	1	2	4	2	1	--	--
Hydrology	3	0.1	--	--	1	2	--	--	--
Mathematical Statistician	8	0.2	2	--	2	1	2	1	--
Meteorology	2	0.1	--	--	--	--	1	1	--
Statistician	23	0.6	--	4	2	4	6	6	1
Textile Technology	24	0.7	--	1	2	10	8	2	1
TOTAL OTHER SCIENCES	**142**	**4.0**	**7**	**21**	**24**	**33**	**33**	**18**	**6**
TOTAL	**3569**	**100.0**	**178**	**315**	**473**	**981**	**865**	**449**	**308**

[1] Includes 53 scientists who have PhD or MS degrees in addition to DVM degrees.

DISTRIBUTION OF SCIENTISTS BY DEGREE LEVEL AND GRADE LEVEL NOVEMBER 1969

GRADE LEVEL	TOTAL		DEGREE LEVEL									
			No Degree		BS		MS		DVM		PhD	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
TOTAL	3569	100.0	35	1.0	920	25.8	877	24.6	36	1.0	1701	47.6
GS-15 and above	308	8.6	1	--	34	.9	42	1.2	13	.4	218	6.1
GS-14	449	12.6	--	--	43	1.2	67	1.9	4	.1	335	9.4
GS-13	865	24.2	6	.2	114	3.2	148	4.1	10	.3	587	16.4
GS-12	981	27.5	8	.2	199	5.6	252	7.1	6	.2	516	14.4
GS-11	473	13.3	12	.4	196	5.5	220	6.2	3	--	42	1.2
GS-9	315	8.8	7	.2	179	5.0	126	3.5	--	--	3	.1
GS-7	178	5.0	1	--	155	4.4	22	.6	--	--	--	--
AVERAGE GRADE	GS-12.1		GS-11.1		GS-10.7		GS-11.7		GS-13.5		GS-13.1	

PERCENTAGE DISTRIBUTION OF SCIENTISTS BY GRADE AND OCCUPATION* NOVEMBER 1969

OCCUPATIONS	Average Grade	Percentage Distribution by Grade within Occupations						
		GS-7	GS-9	GS-11	GS-12	GS-13	GS-14	GS-15+
Agronomy	12.1	7.0	8.1	7.0	23.8	33.0	16.8	4.3
Entomology	12.0	2.4	7.5	15.9	36.2	26.1	8.0	3.9
General Biological Science	12.8	10.5	8.3	4.4	6.6	5.0	21.0	[1]44.2
Genetics	12.7	--	1.9	6.7	34.3	35.2	17.1	4.8
Horticulture	11.8	7.5	4.5	17.9	38.8	16.4	11.9	3.0
Husbandry	11.6	7.4	14.7	13.2	25.0	26.5	13.2	--
Microbiology	12.1	5.0	7.5	14.2	29.2	20.8	19.2	4.1
Plant Pathology	12.4	1.0	2.6	6.6	45.9	30.6	10.2	3.1
Plant Physiology	12.5	--	7.1	5.2	33.5	37.4	10.3	6.5
Soil Science	12.3	2.9	10.0	7.6	29.5	31.4	10.0	8.6
Veterinary Medical Science	13.2	--	--	5.6	16.9	43.8	21.3	12.4
Zoology	12.2	7.8	5.9	9.8	25.5	21.6	25.5	3.9
Agricultural Engineering	11.9	2.8	10.9	24.1	27.3	20.1	9.2	5.6
Chemical Engineering	12.6	--	4.5	15.2	28.8	28.8	9.1	13.6
Civil Engineering	12.3	--	7.6	24.5	26.4	20.8	9.4	11.3
Chemistry	11.8	8.5	11.6	15.5	24.7	19.3	12.7	7.7
Food Technology	11.4	6.1	22.5	14.3	20.4	24.5	6.1	6.1

*Occupations with 49 or more employees

[1] Includes Branch Chiefs, Division Directors, and other top program managers

AGE

DISTRIBUTION OF SCIENTISTS BY AGE GROUPS NOVEMBER 1969

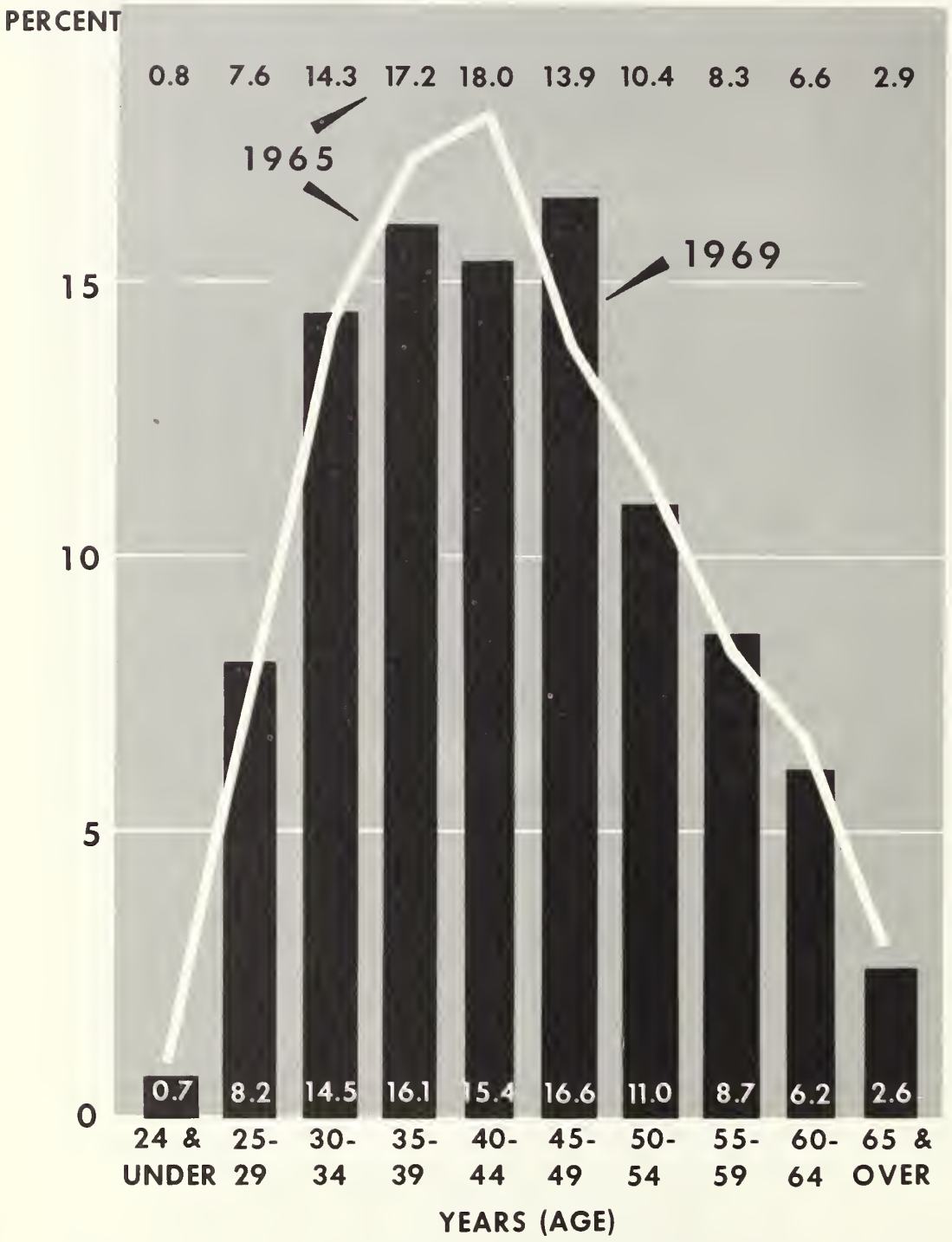
Average age, all scientists	- 43.5 years of age
PhD	- 43.8
DVM	- 47.4
MS	- 43.5
BS	- 42.5
No Degree	- 51.3

Average Age by Grade Group

GS-7	-	30.6 years of age
GS-9	-	36.2
GS-11	-	41.0
GS-12	-	41.9
GS-13	-	45.2
GS-14	-	49.1
GS-15 & Above	-	54.5

DISTRIBUTION OF SCIENTISTS BY AGE GROUPS

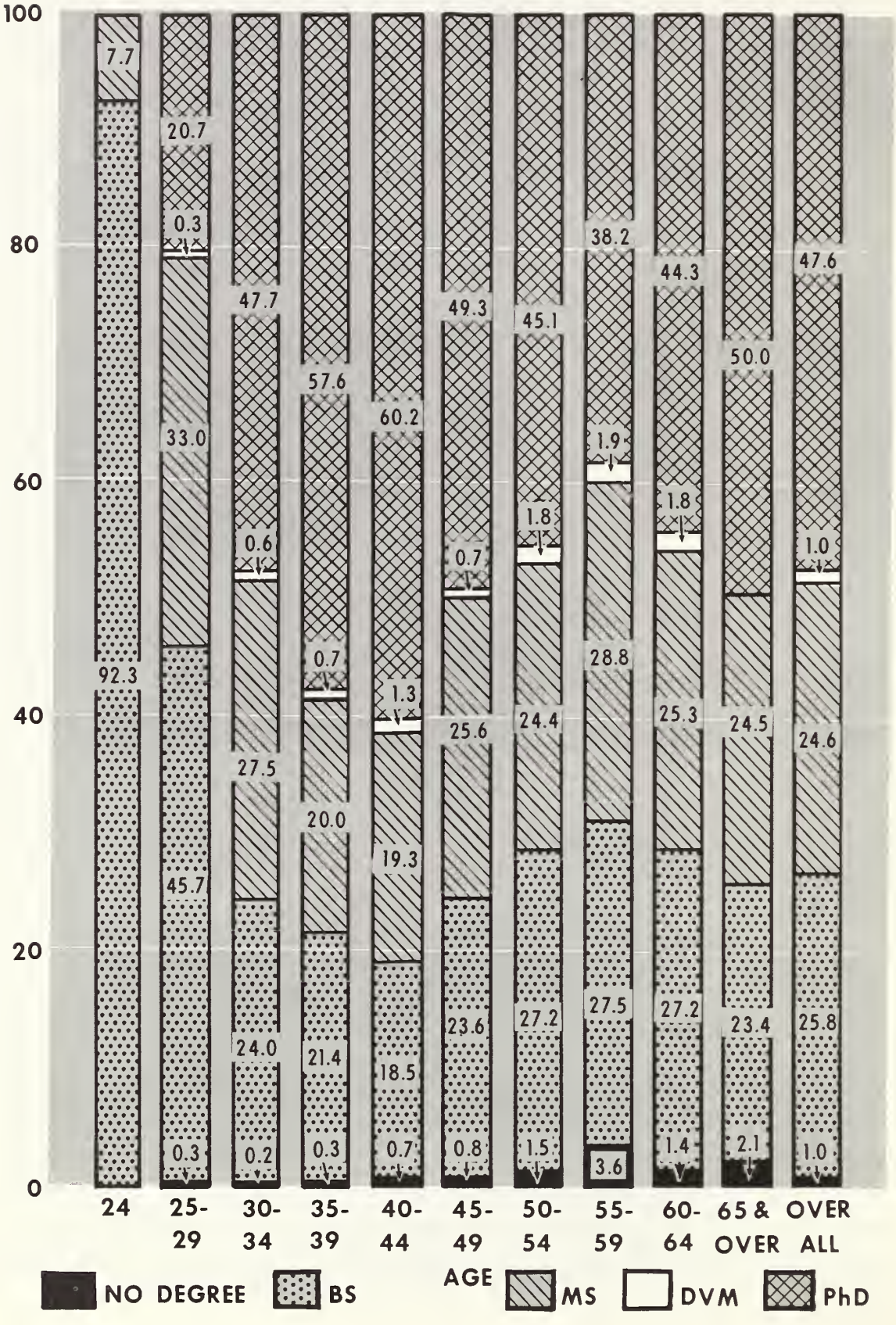
1965 COMPARED TO 1969



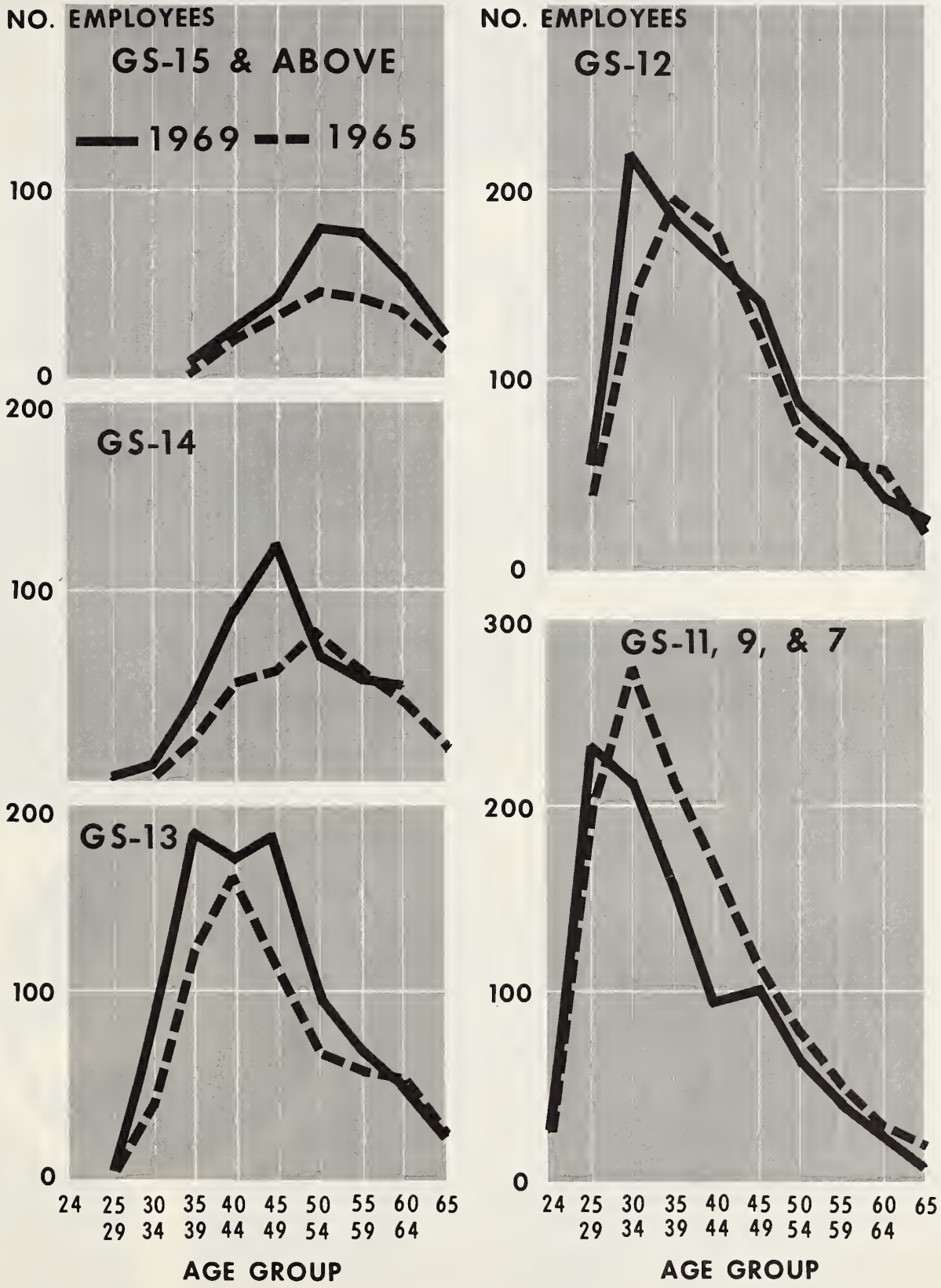
PERCENTAGE DISTRIBUTION OF SCIENTISTS BY DEGREE LEVELS WITHIN AGE GROUPS NOVEMBER 1969

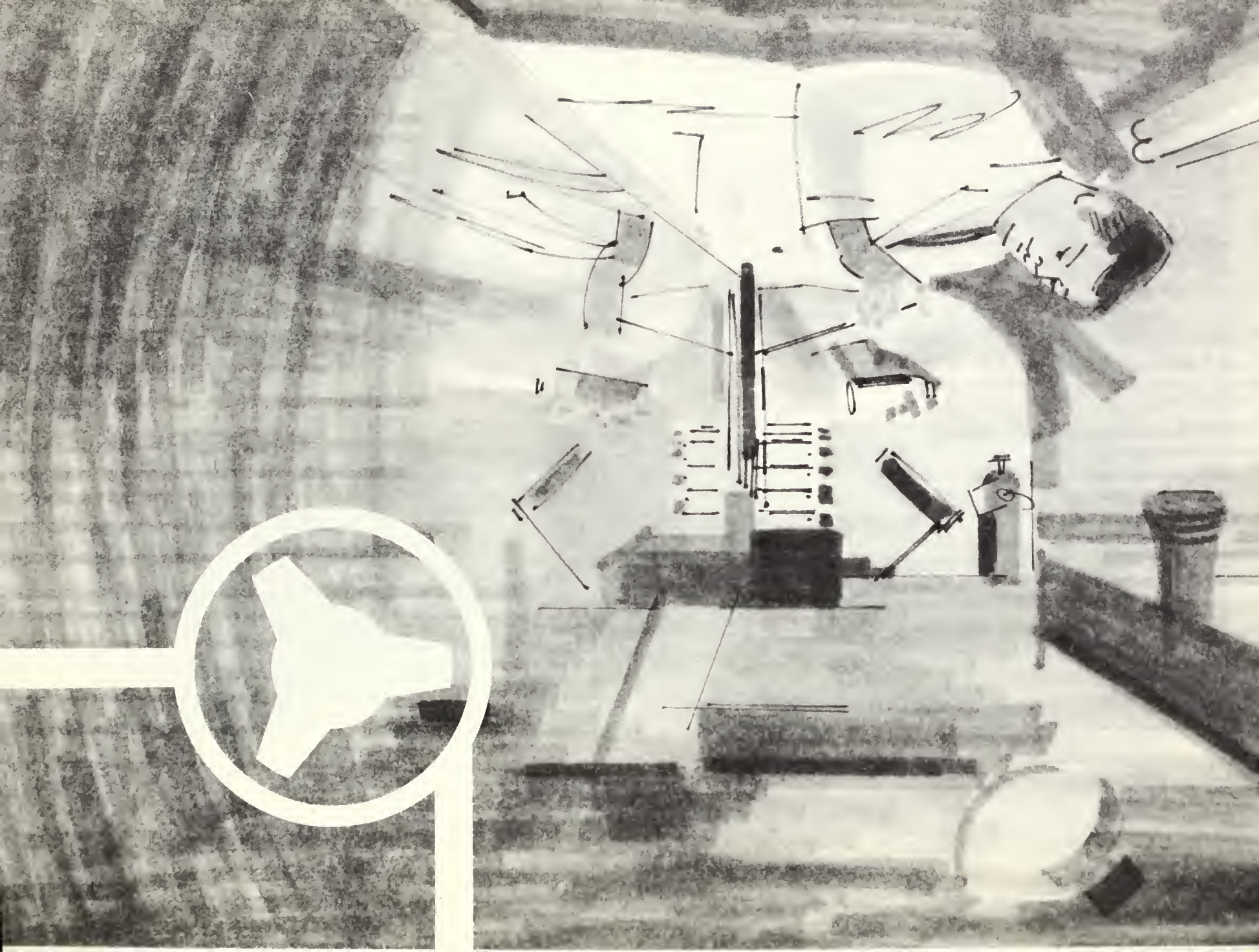
Age Groups	No Degree	BS	MS	DVM	PhD
TOTAL	1.0	25.8	24.6	1.0	47.6
Under 25	--	92.3	7.7	--	--
25 - 29	0.3	45.7	33.0	0.3	20.7
30 - 34	0.2	24.0	27.5	0.6	47.7
35 - 39	0.3	21.4	20.0	0.7	57.6
40 - 44	0.7	18.5	19.3	1.3	60.2
45 - 49	0.8	23.6	25.6	0.7	49.3
50 - 54	1.5	27.2	24.4	1.8	45.1
55 - 59	3.6	27.5	28.8	1.9	38.2
60 - 64	1.4	27.2	25.3	1.8	44.3
65 and Over	2.1	23.4	24.5	--	50.0

DEGREE DISTRIBUTION BY AGE GROUP
NOVEMBER 1969



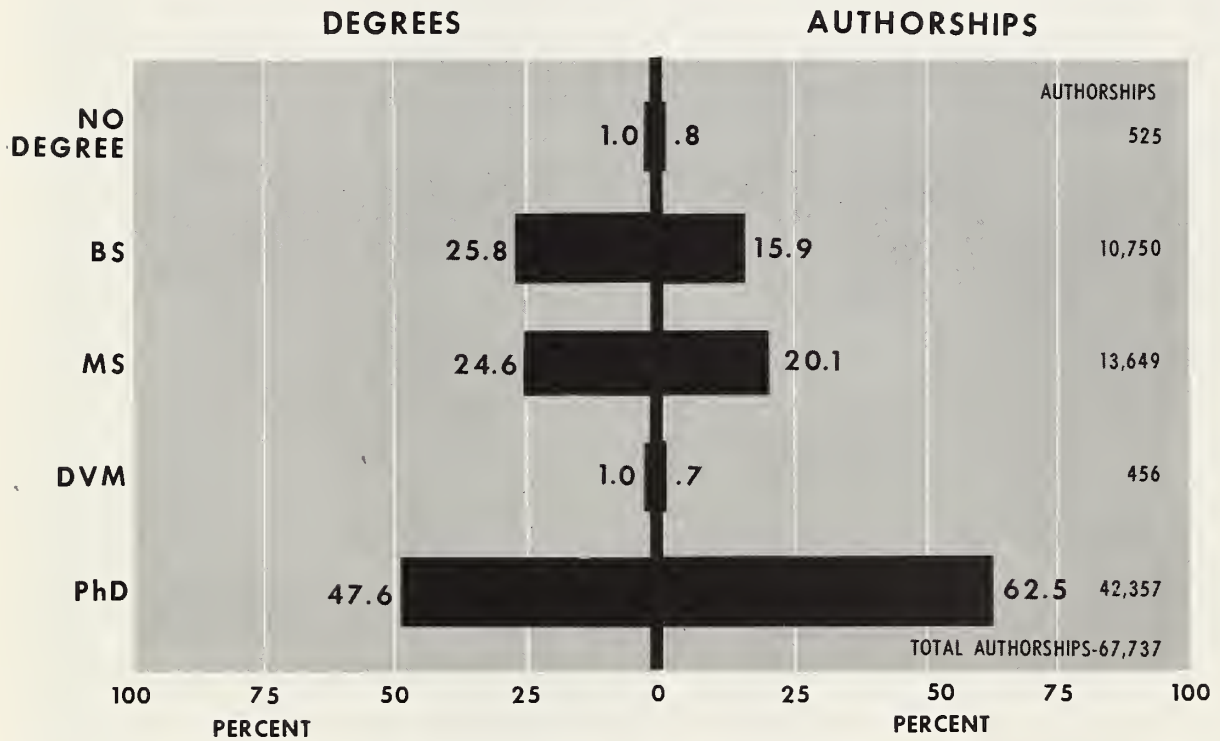
DISTRIBUTION OF SCIENTISTS BY AGE GROUP AND GRADE





PUBLICATIONS

DEGREE LEVEL vs AUTHORSHIP
NOVEMBER 1969



DISTRIBUTION OF AUTHORSHIPS BY GRADE LEVELS NOVEMBER 1969

GRADE LEVEL	AUTHORSHIPS		
	Number	Percent of Total	Average per Scientist
TOTAL	67,737	100.0	19.0
GS-15 and above	14,843	21.9	48.2
GS-14	16,574	24.5	36.9
GS-13	19,265	28.4	22.3
GS-12	12,085	17.8	12.3
GS-11	3,773	5.6	8.0
GS-9	1,016	1.5	3.2
GS-7	181	.3	1.0

AVERAGE NUMBER OF AUTHORSHIPS BY DEGREE LEVEL NOVEMBER 1969

Degree Level	Average per Scientist
PhD	24.9
DVM	12.7
MS	15.6
BS	11.7

APPENDIX

NUMBER AND PERCENTAGE OF SCIENTISTS BY DIVISIONS*
NOVEMBER 1969

Farm Research:		
Agricultural Engineering Research Division (AE)	168	4.7%
Animal Disease & Parasite Research Division (ADP)	204	5.7%
Animal Husbandry Research Division (AH)	159	4.5%
Crops Research Division (CR)	788	22.1%
Entomology Research Division (ENT)	489	13.7%
Soil & Water Conservation Research Division (SWC)	433	12.1%
SUB-TOTAL	**2241**	62.8%
Marketing & Nutrition Research:		
Consumer & Food Economics Research Division (CFE)	49	1.4%
Human Nutrition Research Division (HN)	49	1.4%
Market Quality Research Division (MQ)	150	4.2%
Transportation & Facilities Research Division (TF)	62	1.7%
Eastern Utilization Research & Development Division (EU)	242	6.8%
Northern Utilization Research & Development Division (NU)	228	6.4%
Southeastern Agricultural Research Laboratory (SEARL)	10	0.3%
Southern Utilization Research & Development Division (SU)	244	6.8%
Western Utilization Research & Development Division (WU)	235	6.6%
SUB-TOTAL	**1269**	35.6%
Other:		
Office of Administrator (OA)	48	1.3%
International Programs Division (IPD)	11	0.3%
SUB-TOTAL	**59**	1.6%
GRAND TOTAL	**3569**	

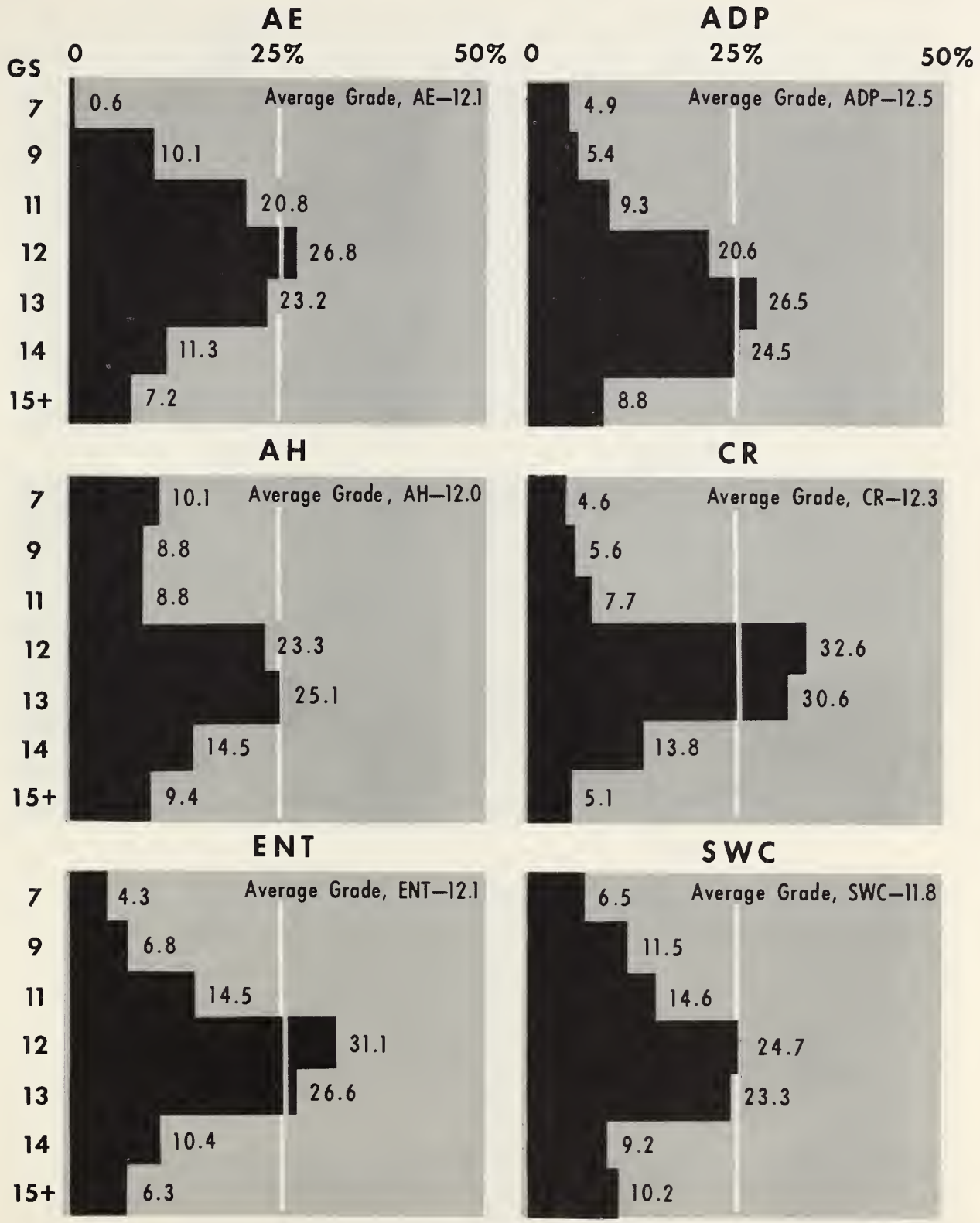
*Each Division will be identified hereafter by the abbreviations as shown in parenthesis above.

COMPARATIVE NUMBERS OF SCIENTISTS BY DIVISION BY DEGREE DECEMBER 1963 - NOVEMBER 1969

	None		BS		MS		DVM		PhD		TOTAL	
	1963	1969	1963	1969	1963	1969	1963	1969	1963	1969	1963	1969
Farm Research:												
AE	1	3	74	54	54	88	--	--	11	23	140	168
ADP	--	--	31	45	46	47	59	28	54	84	190	204
AH	4	--	33	33	41	31	2	1	77	94	157	159
CR	4	3	76	78	159	120	--	--	518	587	757	788
ENT	3	5	143	101	118	137	--	1	159	245	423	489
SWC	--	2	104	90	166	161	--	--	142	180	412	433
SUB-TOTAL	**12**	**13**	**461**	**401**	**584**	**584**	**61**	**30**	**961**	**1213**	**2079**	**2241**
Marketing & Nutrition Research:												
CFE	--	2	17	18	20	19	--	--	9	10	46	49
HN	6	--	23	14	24	11	--	--	18	24	71	49
MQ	4	1	48	33	44	41	--	--	48	75	144	150
TF	8	2	50	38	27	20	--	--	6	2	91	62
EU	13	10	91	94	31	43	--	--	82	95	217	242
NU	--	2	100	91	50	52	--	--	70	83	220	228
SEARL	*	--	*	1	*	2	*	--	*	7	*	10
SU	7	3	137	126	62	54	--	--	43	61	249	244
WU	3	2	113	90	46	35	--	1	98	107	260	235
SUB-TOTAL	**41**	**22**	**579**	**505**	**304**	**277**	**0**	**1**	**374**	**464**	**1298**	**1269**
Other:												
OA and IPD	--	--	16	14	29	16	1	5	33	24	79	59
GRAND TOTAL	**53**	**35**	**1056**	**920**	**917**	**877**	**62**	**36**	**1368**	**1701**	**3456**	**3569**

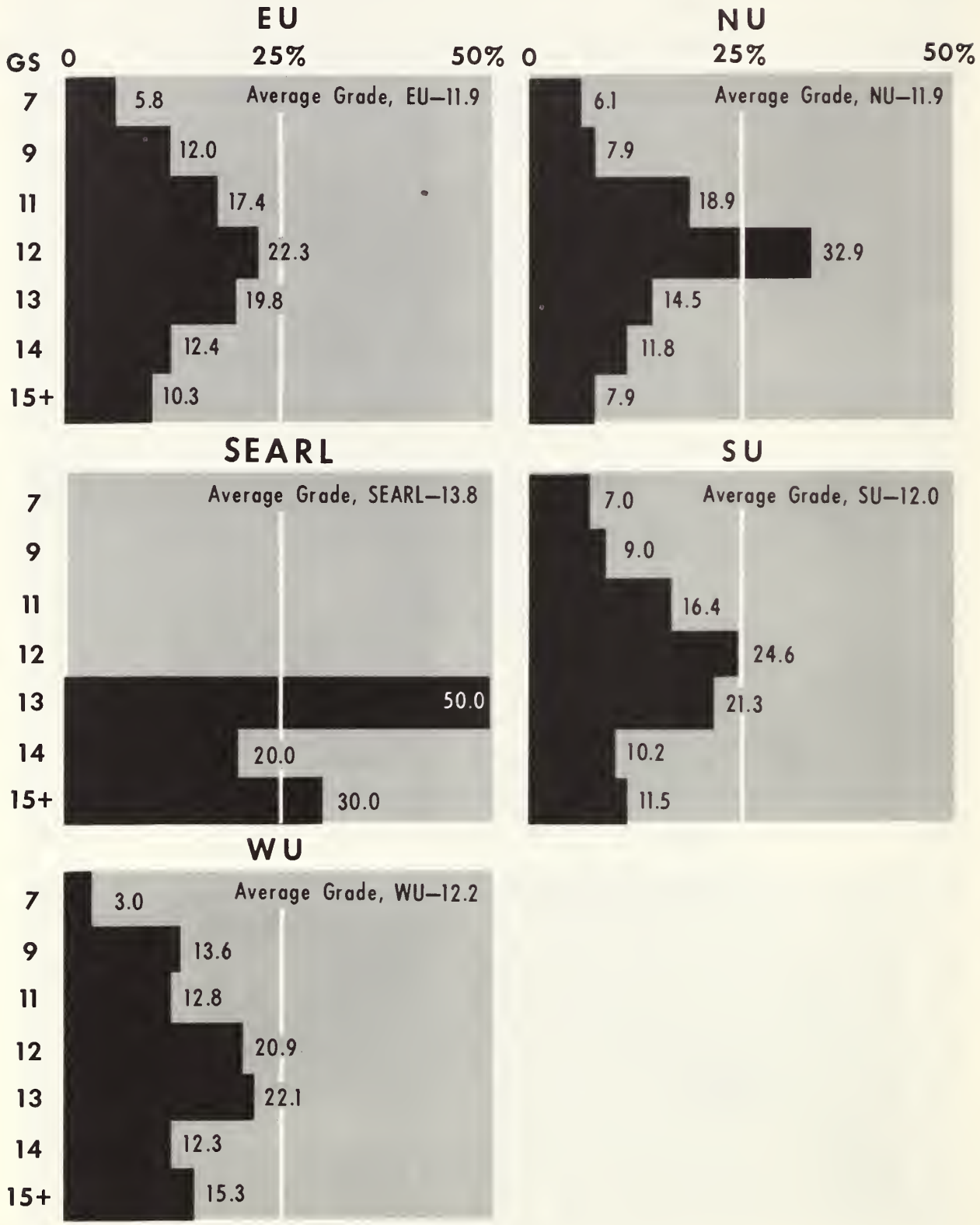
*SEARL Division was established in April 1968

GRADE DISTRIBUTION BY DIVISIONS



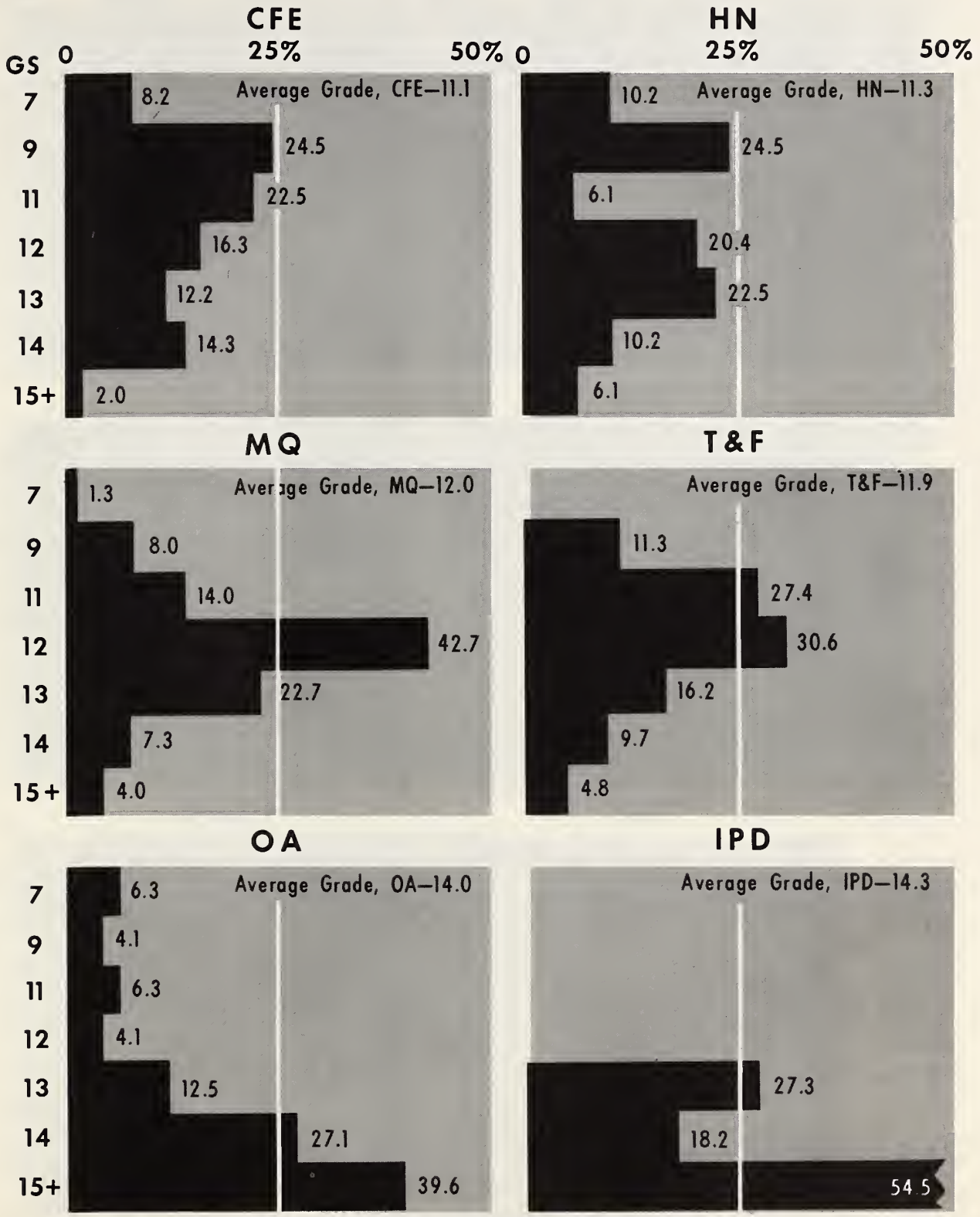
NOVEMBER 1969

GRADE DISTRIBUTION BY DIVISIONS



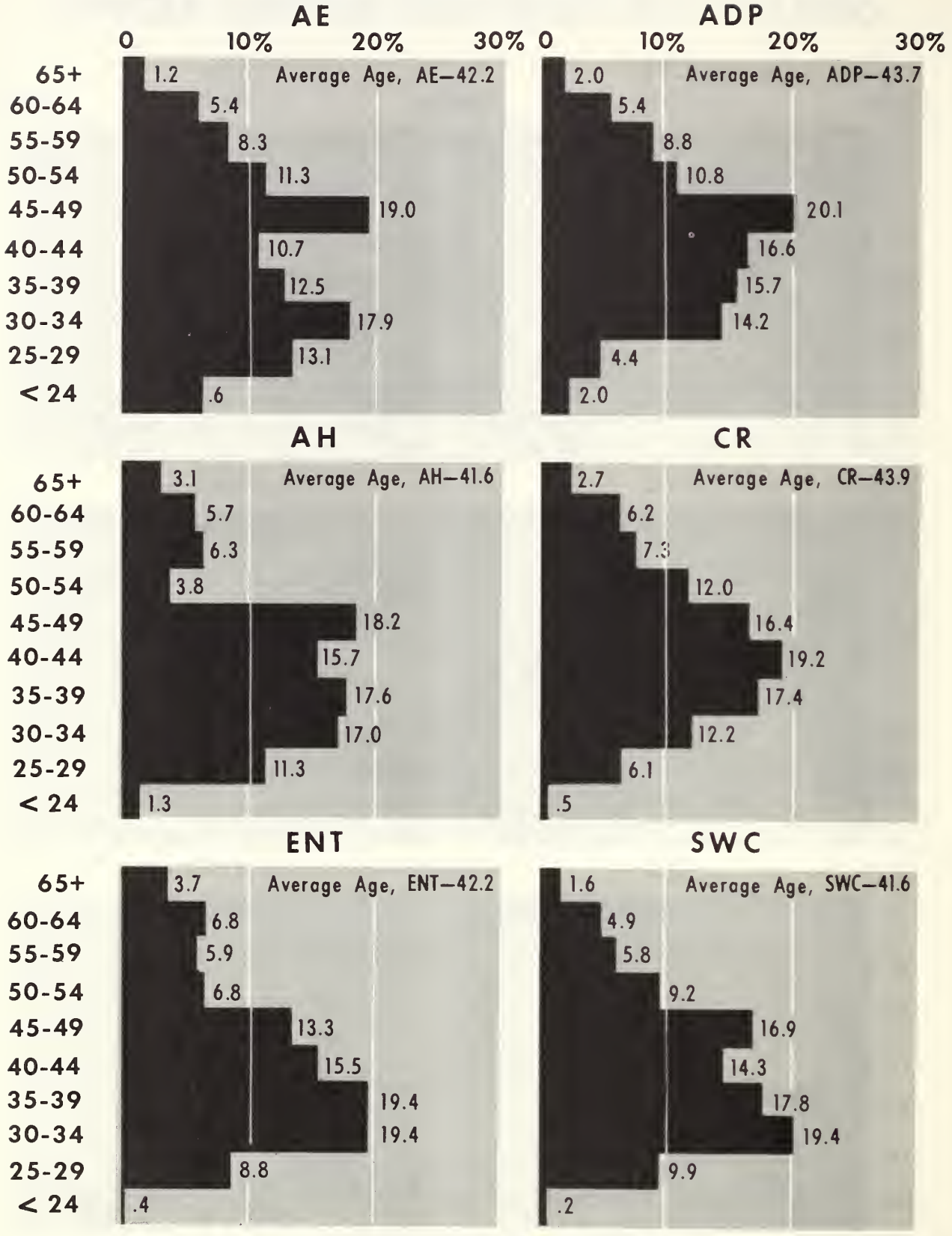
NOVEMBER 1969

GRADE DISTRIBUTION BY DIVISIONS



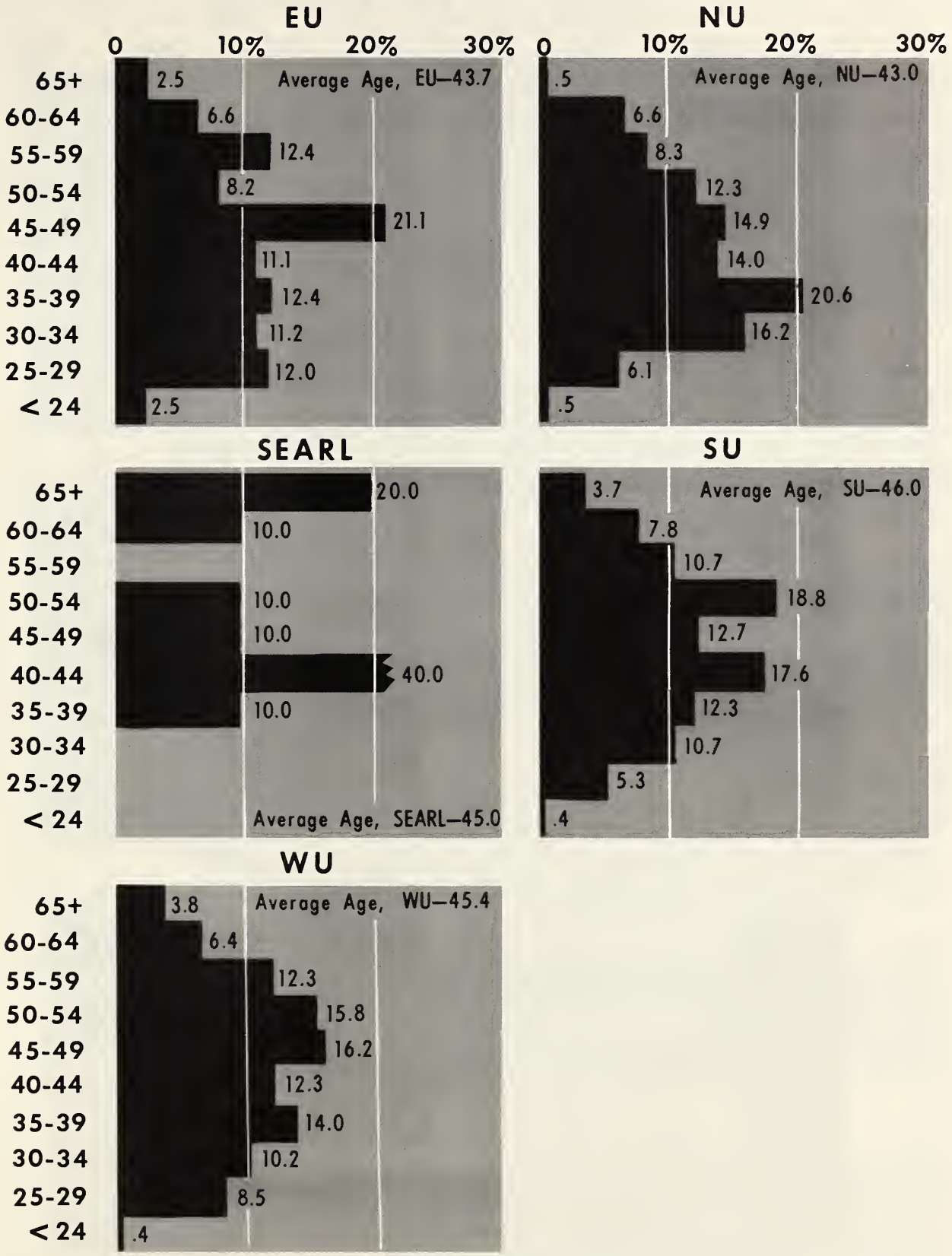
NOVEMBER 1969

AGE BY DIVISION



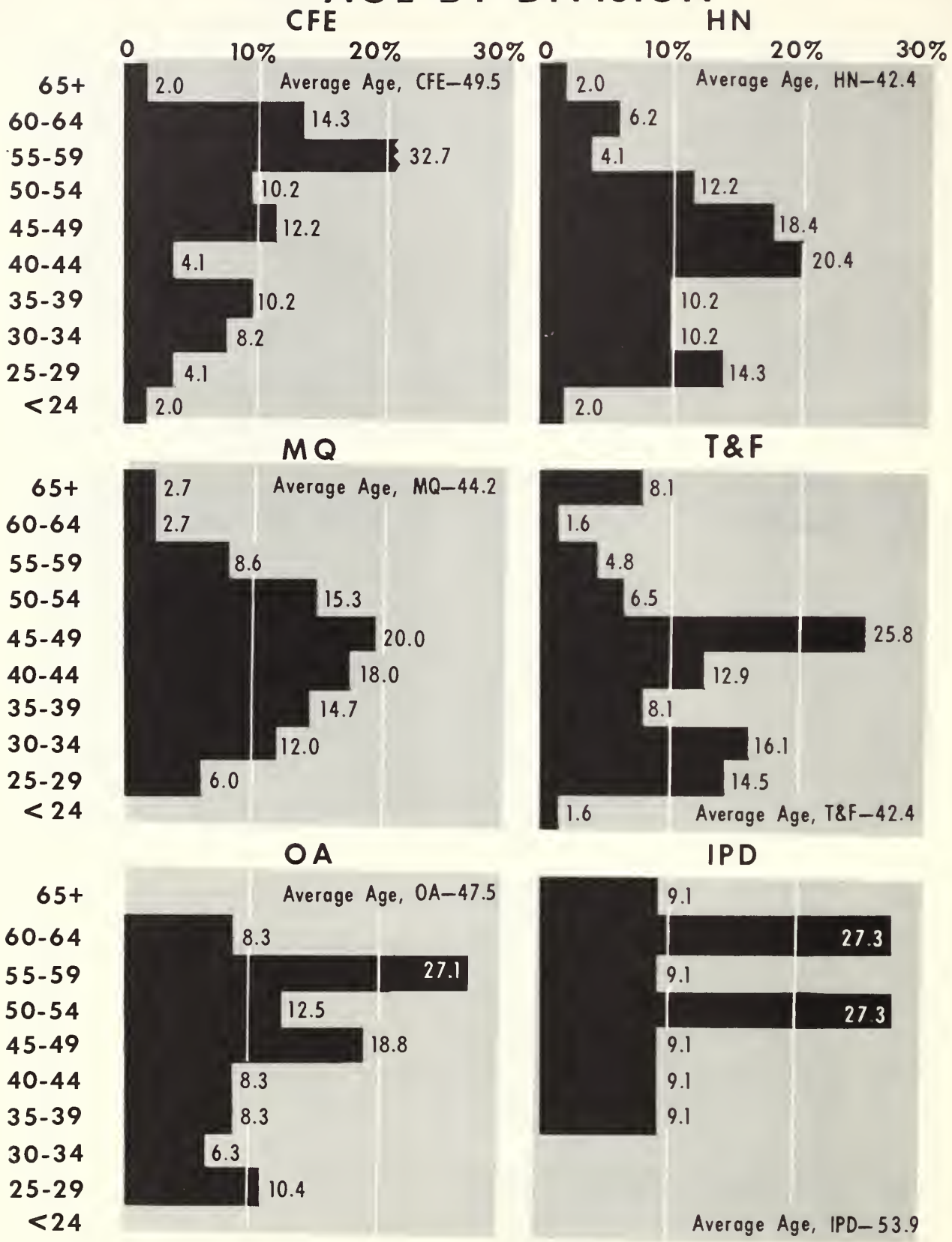
NOVEMBER 1969

AGE BY DIVISION



NOVEMBER 1969

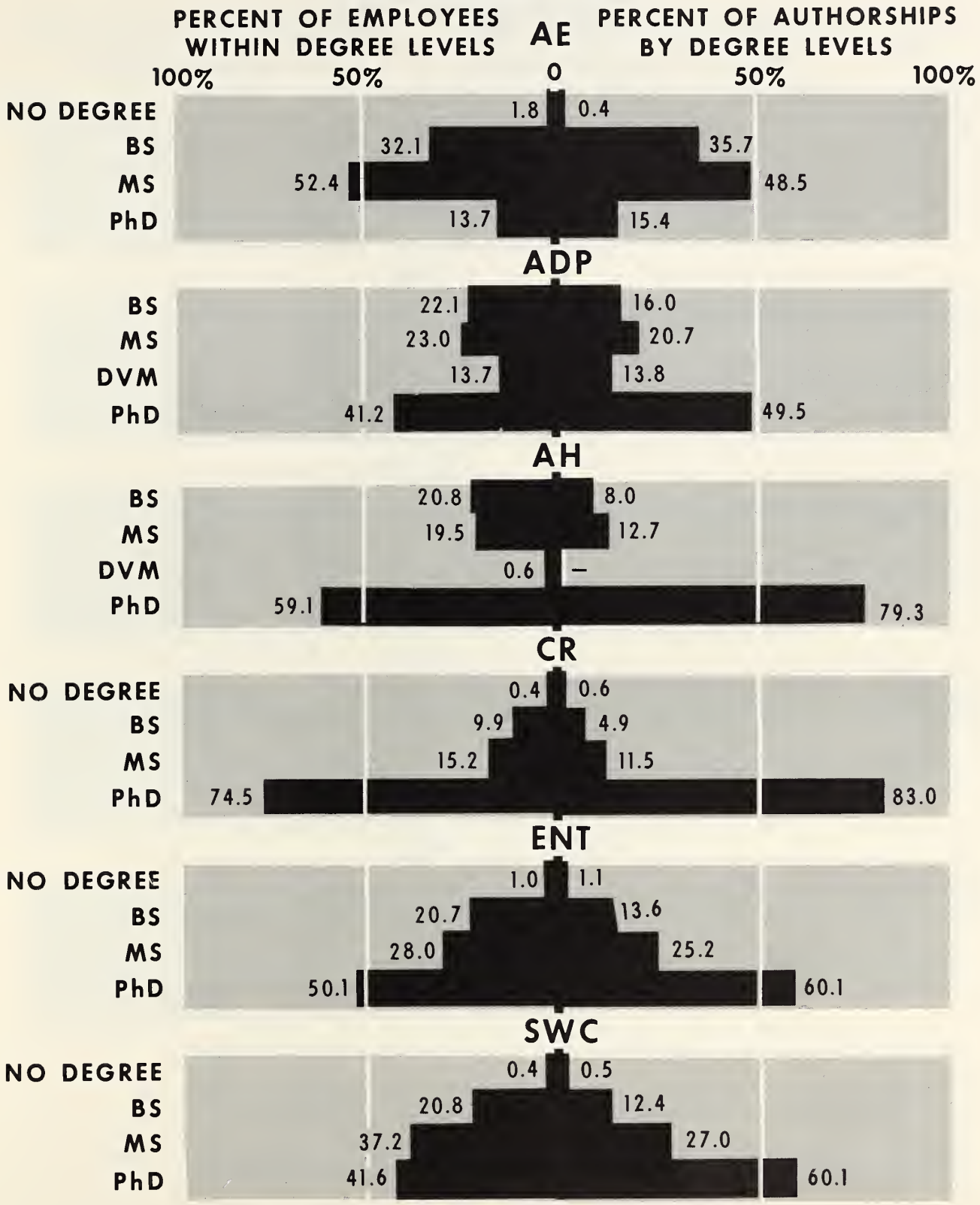
AGE BY DIVISION



NOVEMBER 1969

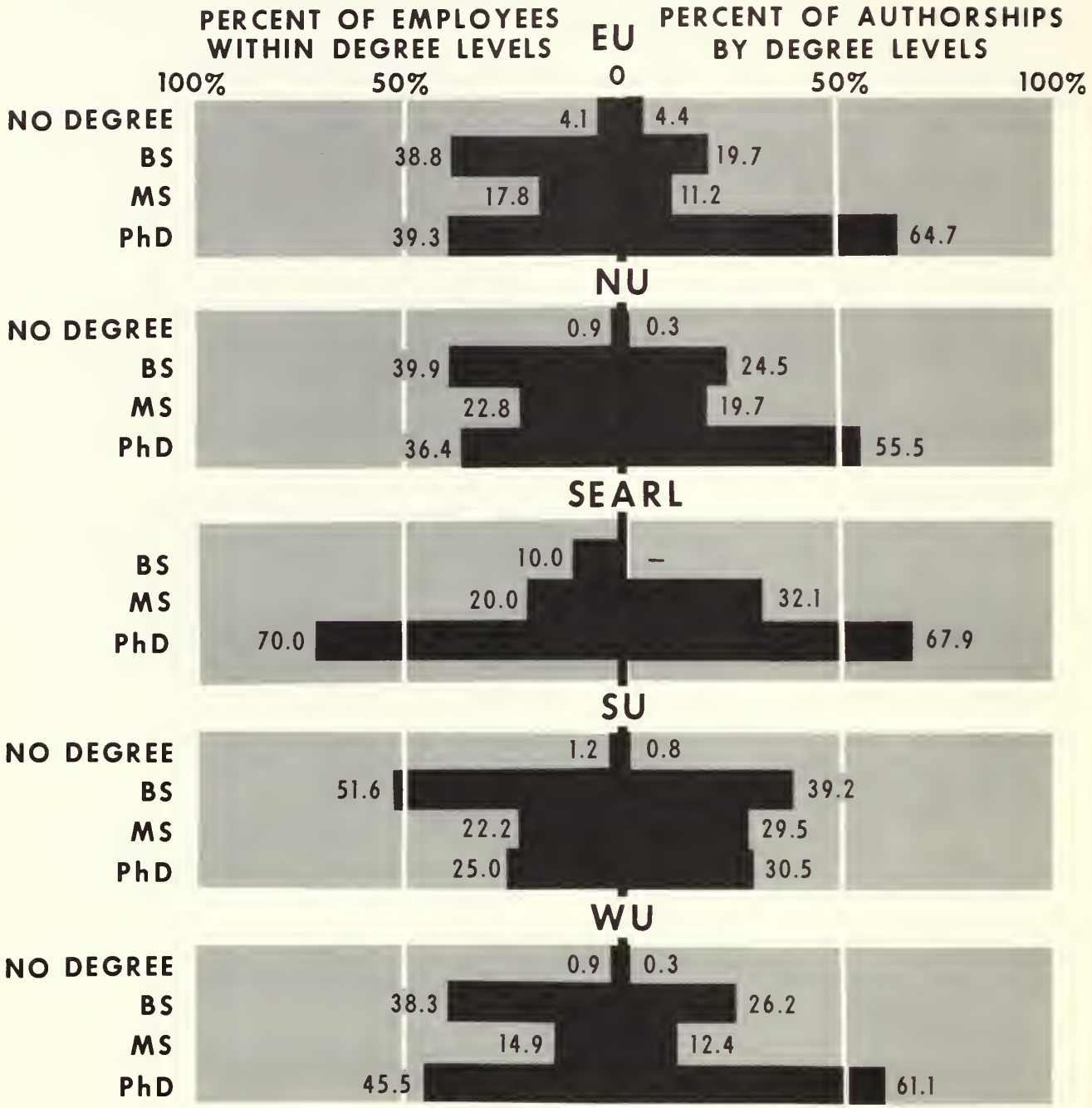
DEGREE LEVEL vs AUTHORSHIP BY DIVISIONS

NOVEMBER 1969



DEGREE LEVEL vs AUTHORSHIP BY DIVISIONS

NOVEMBER 1969



DEGREE LEVEL vs AUTHORSHIP BY DIVISIONS
NOVEMBER 1969